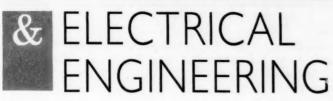
# Computers



List of Contents, Author and Key Word Index Volume 21, 1995



## **Computers & Electrical Engineering**

#### An International Journal

#### editor

Mo Jamshidi: AT&T Professor and Director, CAD Laboratory for Systems and Robotics, Department of EECE, University of New Mexico, Albuquerque, NM 87131, U.S.A. Tel.: (505) 277-5538, Fax: (505) 277-1439. E-Mail: jamshid@houdini.unm.edu

#### editorial office

Karen Koletar: CAD Laboratory for Intelligent & Robotic Systems, Department of EECE, University of New Mexico, Albuquerque, NM 87131, U.S.A. Tel.: (505) 277-0300, Fax: (505) 277-1439, E-Mail:

### founding editor

John B. Slaughter: President, Occidental College, Los Angeles, CA 90041, U.S.A.

## editorial advisory board

K. Furuta Tokyo, Japan

M. Gupta Saskatchewan, Sask., Canada

N. A. Kheir Rochester, Mich., U.S.A.

R. Lumia Gaithersburg, Md, U.S.A.

M. Malek Middletown, N.J., U.S.A.

M. Mansour Zurich, Switzerland

D. A. Pierre Bozeman, Mont., U.S.A.

F. Reza Ottawa, Canada

J. R. Rowland Lawrence, Kan., U.S.A.

A. P. Sage Fairfax, Va, U.S.A.

H. W. Sorenson La Jolla, Calif., U.S.A.

A. Titli Toulouse, France

H. Unbehauen Bochum, Germany

L. A. Zadeh Berkeley, Calif., U.S.A.

#### board of associate editors

A. I. Abdullah Al-Ain, UAE

M. Ahmadi Windsor, Ont., Canada M. Aldeen Melbourne, Australia

F. Aminzadeh Anaheim, Calif., U.S.A.

N. Bagherzadeh Irvine, Calif., U.S.A.

S. Erfani Middletown, N.J., U.S.A.

M. Etezadi Reno, Nev., U.S.A.

P. Groumpos Patras, Greece

H. A. Kalhor New Paltz, N.Y., U.S.A.

C. C. Nguyen Washington, D.C., U.S.A.

M. S. Obaidat New York, U.S.A.

R. V. Patel Montreal, Que., Canada M. Roggemann Kirtland AFB, N.M., U.S.A.

F. M. Salam East Lansing, Mich., U.S.A.

M. E. Sezer Ankara, Turkey

These Boards are being expanded to include representatives from various areas of computers and electrical engineering.

#### **Publishing Office**

Elsevier Science Ltd, Bampfylde Street, Exeter EX1 2AH, England [Tel. Exeter (01392) 51558; Fax (01392) 425370].

Production Editor: Bonnie Tinson (E-mail: b.tinson@elsevier.co.uk)

#### **Advertising and Subscription Offices**

Enquiries from customers in North America should be sent to: Elsevier Science Inc., 660 White Plains Road, Tarrytown, NY 10591-5153, U.S.A., and from the remainder of the world to: Elsevier Science Ltd, The Boulevard, Langford Lane, Kidlington, Oxford OX5 1GB, England [Tel. Oxford (01865) 843000; Fax (01865) 843010].

Frequency: Published 6 issues/annum in January, March, May, July, September and November.

#### **Subscription Rates**

Annual Institutional Subscription Rates 1996: North, Central and South America, US\$730.00, Rest of the World, £459.00. Sterling prices exclude VAT. Non-VAT registered customers in the European Community will be charged the appropriate VAT in addition to the price listed. Prices include postage and insurance and are subject to change without notice.

#### Back Issues

Back issues of all previously published volumes are available direct from Elsevier Science Offices (Oxford and New York). Complete volumes and single issues can be purchased for 1990-1994. Earlier issues are available in high quality photo-duplicated copies as complete volumes only.

Copyright © 1995 Elsevier Science Ltd

Second class postage paid at NEWARK, NJ. Postmaster send address corrections to Computers & Electrical Engineering. c/o Elsevier Science Inc., 660 White Plains Road, Tarrytown, NY 10591-5153, U.S.A.

#### LIST OF CONTENTS

|   |     | NUMBER 1   |
|---|-----|--|
| Gang Feng and Tong Fu   | 1   | Robust adaptive rejection of unknown deterministic disturbances                                  |
| Manik Chandra Mandal,<br>Anindya Sundar Dhar and<br>Swapna Banerjee | 13  | Multiplierless array architecture for computing discrete cosine transform                        |
| T. Kasparis, N. S. Tzannes, M. Bassiouni and Q. Chen                | 21  | Texture description using fractal and energy features  |
| Constantine Katsinis  | 33  | A multicomputer architecture with a segmented shared bus   |
| Maamar Bettayeb and<br>Azzedine Zerguine                            | 47  | Fractionally-spaced equalization using the lattice structure                                     |
| H. Seifi  | 57  | On-line adaptive stabilization of a turbo-generator  |
| A. Kavianpour, N. Bagherzadeh and S. Shoari                         | 69  | Finding elliptical shapes in an image using a pyramid architecture                               |
| Announcement  | I   |  |
|   |     | NUMBER 2   |
| Naser F. Al-Muthairi and<br>Stanoje Bingulac                        | 77  | An algorithm for calculating Markov parameters from transfer function matrices                   |
| D. A. Pierre, J. R. Smith,<br>D. J. Trudnowski and<br>J. W. Pierre  | 89  | Prony based methods for simultaneous identification of transfer functions and initial conditions |
| M. Ahmadi, A. Mazinani,<br>V. Ramachandran and<br>M. Sridhar        | 101 | A computationally efficient technique for deriving 2-variable VSHP                               |
| A. M. Basha, J. Jayachandran and M. Muraleedharan                   | 107 | PC based comprehensive relaying scheme for generator-transformer unit                            |
| Arthur Abnous and<br>Nader Bagherzadeh                              | 119 | Architectural design and analysis of a VLIW processor  |
| Magdy M. Ibrahim and A. M. Ibrahim                                  | 143 | Analysis of digital receiver bipolar preamplifier using the Haus-Adler noise measure             |
|   |     | NUMBER 3   |
| Ketan Mody and<br>Anura Jayasumana                                  | 147 | An efficient multi-layer diagonal router for multi-terminal printed circuit boards               |

|  |     | Contents  |
|--|-----|---|
| Michael B. Woods<br>and Cecil O. Alford                | 159 | Scaleable parallel model development and performance analysis for MIMD molecular dynamics simulations             |
| Man Zhihong  | 183 | Parameter estimation of continuous linear systems using functional approximation                                  |
| Shahram Latifi and Si-Qing Zheng                       | 189 | Determination of Hamiltonian cycles in cube-based networks using generalized gray codes                           |
| M. S. Obaidat  | 201 | A trace-driven simulation study of two-level cache systems  |
| Man Zhihong and M. Palaniswami                         | 211 | A robust tracking control scheme for rigid robotic manipulators with uncertain dynamics                           |
| Call for Papers  | I   |   |
|  |     | NUMBER 4  |
| Enrico Macii and Angelo R. Meo                         | 221 | Testability measures reduce test generation time in sequential ATPG   |
| R. Colbaugh, K. Glass and<br>H. Seraji                 | 229 | Robust adaptive control of Lagrangian systems   |
| Mehmet Celenk  | 243 | Computation of vision operators in hypercube processors   |
| M. A. Al-Turaigi, S. A. Alshebeili and A. Kh. Al-Jabri | 263 | A fast VLSI system for computing third order cumulants  |
| Carol Q. Tong and Ding Lu                              | 271 | Detection of multiple faults using SSFTS in CMOS logic circuits   |
| Constantine Katsinis and Amelie Constant               | 281 | A performance model of multiple resource allocation to tasks with varying demands                                 |
|  |     | NUMBER 5  |
| P. P. Kanjilal and Sarbani Palit                       | 299 | Modelling and prediction of time series using singular value decomposition and neural networks                    |
| David Jeff Jackson                                     | 311 | Hierarchical digital systems modeling utilizing hardware description languages for computer engineering education |
| Ra'ed Y. Awdeh<br>and H. T. Mouftah                    | 321 | Improving the performance of delta networks   |
| Seyed-Ali Ghozati                                      | 341 | A new methodology for the design and the analysis of a class of interconnection networks                          |

Enrico Macii and Tara Wolf

351 Multiple fault diagnosis in combinational circuits

#### Contents

R. Ardebili and J. C. Manifacier 359 Mesh optimization for the numerical simulation of ambipolar transport in low lifetime semiconductor structures Jawad Faiz and M. B. B. Sharifian 367 Optimum design of a three phase squirrel-cage induction motor based on efficiency maximization Allison H. Evans and Enrico Macii 375 A detailed analysis of combinational multiple-line redundant circuits NUMBER 6 P. Gonzalez de Santos 383 Path tracking with quadruped walking machines using and M. A. Jimenez discontinuous gaits Malleswara Talla. 397 A novel congestion control in hybrid ATM/TDMA Ahmed K. Elhakeem networks and Michel Kadoch Paul V. McDonough, 417 A new chaos detector Joseph P. Noonan and G. R. Hall H. Safiri, M. Ahmadi and H. Nivi 433 Classification of paint on metallic surfaces using spatial domain analysis of laser images Ming Xie 441 Trinocular vision for AGV guidance: path localization and obstacle detection Seved-Ali Ghozati 453 A graph approach to cube identification and Fu-Wei Chen Peter A. Stubberud 465 The design and implementation of multiplierless nonrecursive linear phase discrete time filters Fathy E. Eassa, M. M. Eassa 483 A computational model for static data flow machines and M. Zaki